

Tropical Winds

The Official Newsletter of WFO Miami



Winter View of Downtown Miami / Snowflakes on the Miami Tower - Dan Gregoria

Issue 7 – Winter 2011

Welcome to the winter 2011/2012 edition of “Tropical Winds”. It was another uneventful hurricane season for South Florida in terms of tropical systems, but a very peculiar end of season was certainly experienced. Heavy rain fell in October, 20 inches some areas, finally bringing to an end to the drought across South Florida. Now we have winter to look forward to. This is the time of year when the population swells as the threat of hurricanes has passed and seasonal residents and tourists migrate to enjoy the warmer weather. With average daily highs in the mid- to upper- 70s and lows in the mid-50s to near 60 and most often rain free, who wouldn’t want to come? December is also the time of year when we tend to look back at the past hurricane season and see how it compared to previous years. In this issue, we will look at the weather which has occurred across South Florida over the past few months, the hurricane season and the forecast ahead.

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HAPPY READING!



Weather Summary



Sunrise over Doral - August 2010 - Andrew Tingler

By David Ross

Looking Back at September, October & November

From the west coast to the east coast, all four climate sites across South Florida started off the 3-month period on the drier side. Naples and West Palm Beach had near normal rainfall in September, while Fort Lauderdale and Miami were both significantly drier than normal for the month.

These deficits were offset by a surplus of rainfall in October at all of these locations, with Naples and West Palm Beach almost doubling the normal October rainfalls and Fort Lauderdale and Miami more than doubling their normal amounts *[more detail provided in the table below.]* Though not an airport location, another site worth mentioning is Miami Beach, with an October rainfall total of 21.34 inches. This is now in the record books as the wettest October on record for Miami Beach, with record keeping dating back to 1942.

November was yet another drier than normal month at all four sites. Naples was the closest to normal, with a deficit of 0.32 inches and West Palm Beach ended the furthest from normal, down 3.42 inches from normal. The 3-month totals range from a surplus of 1.21 inches in West Palm Beach to a surplus of 3.61 inches in Fort Lauderdale.

Drought conditions officially improved area wide by the end of October due to the widespread heavy rains which occurred. A more detailed summary of the heavy rainfall event in late-October can be found [here](#).

Palm Beach International, Fort Lauderdale International and Naples Municipal Airport continue to carry a significant rainfall deficit for the year, ranging from 11.96 to 20.43 inches below normal. Miami International Airport is the only exception to this, with a surplus of 2.88 inches.

The table below depicts the wettest days recorded at the four airport observation sites from September through November. Perhaps not surprisingly, all four are from the month of October.

Highest 1-Day Rainfall Totals (September 1 – November 30, 2011)

Airport Site	Rainfall (inches)	Date of Occurrence
Naples	2.73	October 28th (new record)
Fort Lauderdale/Hollywood	3.48	October 29th (new record)
Miami	3.14	October 16th
West Palm Beach	2.61	October 28th

The table below breaks down the monthly rainfall totals and departures from normal at Naples Municipal Airport, Fort Lauderdale/Hollywood International Airport, Miami International Airport, and Palm Beach International Airport.

Monthly Rainfall Totals (inches) and Departures from Normal (September 1 – November 30, 2011)

	Naples		Fort Lauderdale		Miami		West Palm Beach	
	Total	Dep.	Total	Dep.	Total	Dep.	Total	Dep.
Sep.	6.96	-0.73	6.32	-2.27	4.99	-4.87	8.22	-0.13
Oct.	8.03	+3.84	15.52	+8.70	15.52	+9.19	9.89	+4.76
Nov.	1.72	-0.32	0.42	-2.82	1.80	-1.47	1.33	-3.42
3-Month	16.71	+2.79	22.26	+3.61	22.31	+2.85	19.44	+1.21

The first cold front of the fall season came through South Florida on October 1st, with four more pushing through by the end of the month and another five fronts in November. Low temperatures dipped into the cool territory quite a few times over the past two months with these frontal passages. This fall season’s coolest temperature so far has been 54 degrees for the west coast, at Naples, and 53 degrees for the east coast, at West Palm Beach.

Average monthly temperatures at all four airports were either at or above the 30-year normal for September and November. Average October temperatures were below normal, as can be expected with a period of excessive rainfall and cloudy conditions. The only location to experience a slightly warmer than normal 3-month period was West Palm Beach, coming in at 0.5 degrees above the normal average.

The following table breaks down the average monthly temperature and departure from normal at Naples Municipal Airport, Fort Lauderdale/Hollywood International Airport, Miami International Airport, and Palm Beach International Airport.

**Average Monthly Temperature (degrees Fahrenheit) & Departure from Normal
(September 1 - November 30, 2011)**

	Naples		Fort Lauderdale		Miami		West Palm Beach	
	Avg.	Dep.	Avg.	Dep.	Avg.	Dep.	Avg.	Dep.
Sep.	82.4	0.0	83.7	+0.5	83.8	+0.9	82.6	+0.8
Oct.	76.2	-2.3	78.3	-2.3	78.5	-1.4	77.5	-0.8
Nov.	72.7	+0.6	75.7	+0.2	75.6	+0.7	74.5	+1.7
3-Month	77.0	-0.7	79.1	-0.7	79.2	0.0	78.1	+0.5



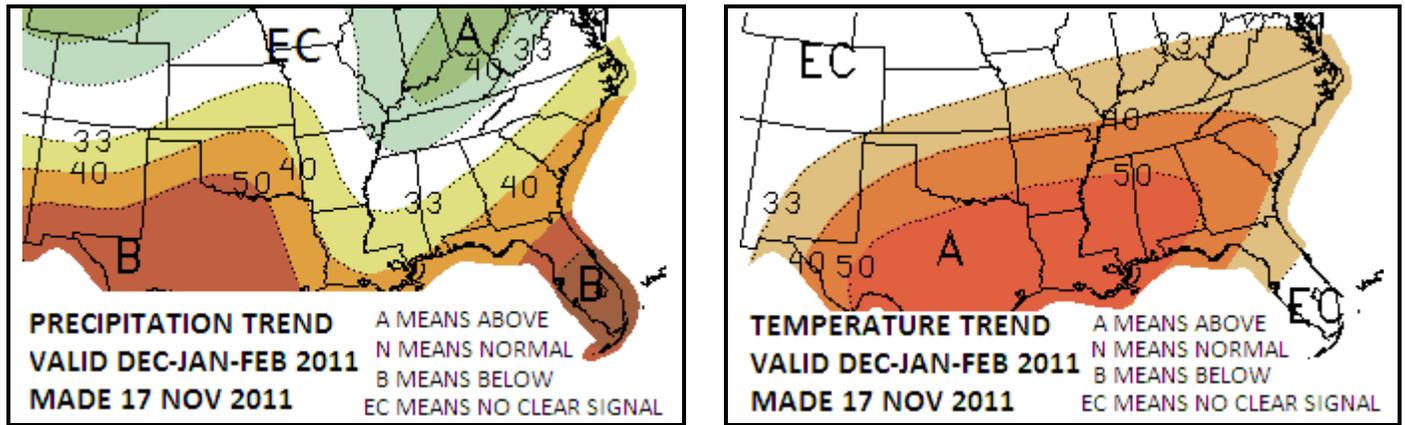
Chihuly glass art at Fairchild Tropical Botanic Garden - 2006 - Andrew Tingler

By David Ross

December through February Outlook

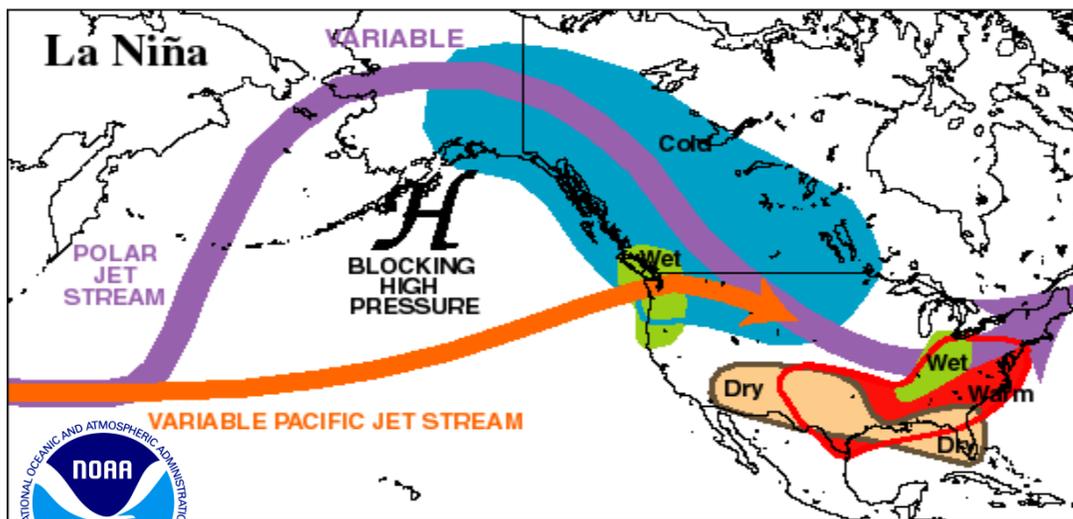
The Climate Prediction Center's (CPC) 3-month forecast continues to indicate a below normal trend in South Florida rainfall this dry season. Temperature forecasts for the southern Florida peninsula do not have any clear indicators, with skill levels not quite high enough to categorize one way or the other. Northern portions of the peninsula are expected to trend toward above normal temperatures through the winter months.

The figures below depict the 3-month precipitation (left) and temperature (right) trends forecast by CPC. These forecasts are for the period spanning December, January and February.



A key factor in these forecasts is the recent return of La Niña conditions to the equatorial Pacific. La Niña influences U.S. weather patterns by shifting winter storm tracks generally more to the north, thus resulting in less moisture and instability as cold fronts move through the Sunshine State. While some cold fronts may not pack as much of a punch when they come through the local area, arctic/polar cold air outbreaks do remain a possibility during La Niña winters.

The graphic below, courtesy of NOAA's [CPC](#), depicts general influences on winter-time U.S. weather patterns during La Niña.



Climate Prediction Center/NCEP/NWS

Severe Weather

Wind and heavy rain in Weston - Jun 2010 - Andrew Tingle

By Dan Gregoria

Isolated severe weather is not uncommon across South Florida during the rainy season, which typically stretches from mid-May through mid-October. This is the time of the year when thunderstorms become a daily occurrence - and this year was no exception.

On June 15th, a line of severe thunderstorms, which developed over central Florida, moved south across the greater Naples area producing severe wind gusts of 60 to 80 mph, resulting in many trees downed along with some 30,000 homes without power. A severe thunderstorm struck the western Broward metro area on June 13th. Hail up to golf ball size along with 60 mph winds produced extensive damage, especially to cars, from Pembroke Pines northeast into the Weston and Davie areas.

A few tornadoes also occurred across South Florida this past rainy season, most notably the Tamarac-North Lauderdale tornado on August 2nd and the Sunrise-Plantation tornado on October 18th.

Tamarac-North Lauderdale tornado, August 2nd

This tornado formed at 5:03 PM EDT Tuesday, August 2nd, affecting portions of Tamarac and North Lauderdale. Despite an environment not favorable for tornadoes on this day, the tornado developed as a result of the collision of two boundaries. It was determined that the tornado had a maximum wind speed of 90 MPH, which has a rating of EF1 on the Enhanced Fujita Scale. This rating is on the low end of the scale, which rates tornado strength from EF0 to EF5. Most of the damage associated with this tornado was EF0 rated, with isolated EF1 damage. No serious injuries were reported with this tornado.

The tornado tracked across portions of Tamarac and North Lauderdale just north of McNab Road and East of University Drive.



Tamarac-North Lauderdale tornado
Courtesy of Dee Nevaras, Skywarn Spotter

Damage was mostly confined to roofing material and trees, with a roof partially peeled off one home and frame windows broken and blown out from a couple of others.

Here are a couple of pictures of the damage caused by this tornado:

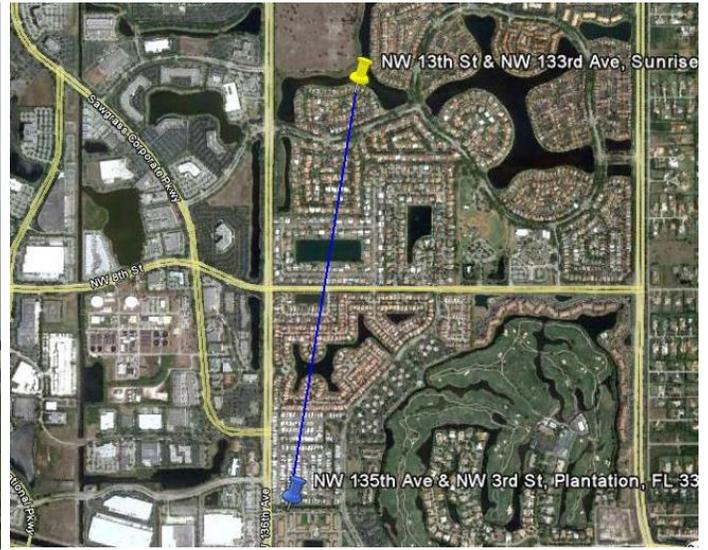


Sunrise-Plantation tornado, October 18th

This tornado developed at around 10:10 PM on October 18th, affecting the Sunrise and Plantation areas. Unlike the tornado of August 2nd, this tornado formed from a supercell thunderstorm in an environment highly favorable for tornadoes. The tornado was rated an EF-2 with winds of up to 120 mph. It damaged about 50 homes with at least a dozen homes having significant damage. No serious injuries were reported with this tornado.



Tornado Damage



Tornado path across Plantation and Sunrise



Tropical Storm Fay in Collier County - August 2008

By David Ross

The 2011 Atlantic Hurricane season was active, with 19 tropical systems gaining enough strength to become named storms. With seven hurricanes, three classified as major, this year continued the trend of active hurricane seasons going back to 1995.

The following table compares the 2011 hurricane season to the historical average, 1966-2009, broken down by storm intensity. The 2011 total does include an unnamed system from late-August into early-September, which has been classified as a tropical storm after a recent post-storm analysis.

Storm Activity for the Atlantic Basin: 2011 versus Average

Intensity	2011	Average
Total Named Storms (39-73 mph)	19	11
Total Hurricanes (74+ mph)	7	6
Total Major Hurricanes (111+ mph)	3	2

Only one of the seven hurricanes that formed this year made landfall in the United States. This lone, but devastating, storm was Hurricane Irene and it will likely be remembered for years to come from states in the mid-Atlantic region up through the northeast. The last hurricane to make landfall in the U.S. prior to Irene was Hurricane Ike, when it came ashore the Texas coast in 2008. A record-setting six years has now gone by since the U.S. experienced a major hurricane, the last being Hurricane Wilma in 2005.

The majority of this year's storms (thirteen) formed and remained out in the Atlantic Ocean, in addition to one short-lived tropical depression. Five of the nineteen systems developed in the Caribbean Sea, and Hurricane Nate (upgraded from tropical storm strength during post-season analysis) was the only system to form in the Gulf of Mexico this year.

The official NOAA outlook for the 2012 hurricane season will be released just before the June 1st start date of next year's hurricane season. Names for the 2012 Atlantic Hurricane Season will be:

Alberto	Helene	Oscar
Beryl	Isaac	Patty
Chris	Joyce	Rafael
Debby	Kirk	Sandy
Ernesto	Leslie	Tony
Florence	Michael	Valerie
Gordon	Nadine	William

Employee Spotlight



Miami - Dan Gregoria - March 2011

By Brad Diehl and Evelyn Rivera

Spotlight on... Brad Diehl, Meteorologist

How did you become interested in weather?

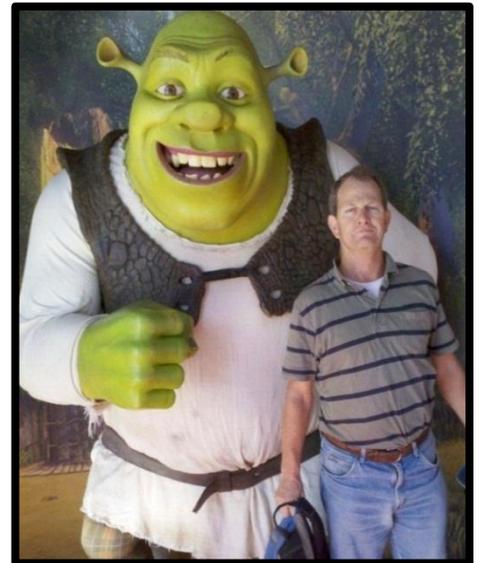
I was in a hiking and canoe club when I first started college and the leader of the club was an ex-meteorologist in the Navy. While on our adventures, he would talk a lot about the weather and that initially get me interested, in addition to growing up in Florida and experiencing severe thunderstorms and hurricanes.

Where did you take your studies?

At Florida State University, both a Bachelors and Master's degree.

What happened after graduation?

I was working for a professor doing research and he gave me a job announcement and said maybe I should consider the job, which was in Saudi Arabia. Before I knew it I interviewed for the job and went to work there for two years, a very interesting period in my life.



Where did you work before the NWS?

I had many interesting jobs, most of them in research or computer programming, with a few of them in various countries, starting in Saudi Arabia, then eventually to France, Australia and the last one was to Puerto Rico where I started with the NWS.

What aspirations do you have today?

I am hoping to transition from a forecaster back to doing computer programming or working at NWS Headquarters in Washington, D.C.

What's the best/worst part of your job?

I suppose the worst part of the job is the rotating shift work, the weather never stops and the office has to be staffed 24/7. The best part for me is to monitor the sub-tropical and tropical weather, which is what always interested me the most as opposed to severe weather.

When you are not working here, what do you like to do?

I like any activity involving the ocean. I routinely play tennis, ride my bicycle and just about anything involving the outdoors.

Changes at the WFO

Sunset in Doral - Spring 2011 - Dan Gregoria

By Evelyn Rivera and David Ross

Andrew Tingler

In October we said farewell to Andrew Tingler, a forecaster here at WFO Miami since August 2006 and former Editor-in-Chief of "Tropical Winds". He transferred to the weather forecast office in Lake Charles, Louisiana to fill a formerly vacant forecaster position.

Farewell and Good luck!



Thanks for Reading!



Chihuly glass art at Fairchild Tropical Botanic Garden - 2006 - Andrew Tingler

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*Have a Happy and Safe
Holiday Season!*